The Bureau of Reclamation - A Brief History[1]

by

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The Bureau of Reclamation is the nation's largest water wholesaler serving more than 30 million people and irrigating 10 million acres of land. It is also the second largest producer of hydroelectric energy in the United States, providing enough electricity to serve 6 million homes. Today's agency is a far cry from the one created at the turn of the century with the goal of "reclaiming" the arid lands of the west and providing homesteads for western settlement. The many changes that the agency has gone through in the past 90 years, some by its own initiative and some through pressure from outside, has assured that Reclamation will play an important role as the west prepares to enter the next millennium.

The Bureau of Reclamation was created in 1902 as the United States Reclamation Service, then a division of the United States Geological Survey. Creation of the Reclamation Service was the culmination of a decades long effort to "reclaim" the arid lands of the western United States through the development of irrigated agriculture. In the years prior to passage of the Federal Reclamation Act of 1902, Congress passed several laws aimed at promoting settlement of the west through disposal of public lands and the development of irrigation. The earliest laws placed responsibility for irrigation development with private enterprise. When those efforts proved

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unsatisfactory, new laws aimed at encouraging the states to develop irrigation works were passed. While partly successful, these efforts too proved to be unsatisfactory.

The barriers to western settlement were unlike those which had faced the first settlers in the east. Throughout much of the eastern U.S., water was abundant and available year-round. But in the west, rivers which ran full and fast in the spring often dwindled to near-nothing in the late summer and fall. In addition, much of the western region's precipitation came during the winter months when it was of no use to irrigators. The solution to this problem was the development of storage reservoirs and works to capture winter rains and spring floods for release in the late summer and early fall. The cost of developing such storage was high, and few private enterprises could afford such developments. Many irrigation developments suffered and failed due to lack of adequate storage. During the 1890s, the demand for federal irrigation development in the west grew, and meetings were held throughout the nation to garner support for a federal reclamation program.

As the turn of the century approached, the voice of the western irrigation movement grew, echoing from the halls of Congress and in the headlines of the popular press. Led by Nevada Representative Francis Newlands, publisher William Ellsworth Smythe, and George Maxwell, leader of the National Irrigation Association, the western irrigation movement gained momentum. In 1900, each of the major political parties inserted pro-irrigation planks in their platforms, taking the movement out of the west and making it a national issue. The first bills introduced in Congress to establish a federal reclamation program failed, but support continued to grow. Seen primarily as a western issue, few eastern and southern politicians showed much interest in western irrigation. But after western interests blocked rivers and harbors legislation which contained a

number of pet projects for eastern congressmen, western irrigation suddenly became interesting to eastern politicians.

The "reclamation" movement received a significant boost when Theodore Roosevelt became president in 1901. Elevated to the office of President by the assassination of William McKinley, Roosevelt was already a strong supporter of western irrigation. A former resident of the arid western regions, Roosevelt had first hand knowledge of the area's condition. Moving swiftly to establish a federally supported reclamation program in the west, Newlands re-introduced his reclamation bills. Armed with strong public support and the endorsement of the President, Newland's bill quickly moved through both houses of Congress and was signed into law by Roosevelt on June 17, 1902.

Under the terms of the Reclamation Act, the Secretary of the Interior was authorized to locate and construct irrigation works in the sixteen states and territories located in the western United States. Funds for construction of those project were to come from the sale of public lands within those states and territories. As Texas contained no public lands, it was not included in the 1902 act, but would be added by special legislation in both 1905 and 1906. The Secretary was further authorized to close to settlement all lands that would be irrigable under the projects. Following completion of project facilities, these lands would be opened for settlement under provisions of the various homestead laws and in tracts no larger than 160 acres. The 160 acre limitation was designed to prevent land speculation and to encourage homesteading by individuals and families - a major focus of western irrigation supporters.

Within weeks following passage of the Reclamation Act, Secretary of the Interior Ethan Allen Hitchcock formed the Reclamation Service under the jurisdiction of the U.S. Geological

Survey. Although under the jurisdiction of the Geological Survey, the Reclamation Service was not to be part of the Survey. Frederick H. Newell, chief of the Survey's Division of Hydrography and a strong supporter of western reclamation, was appointed head of the new service and given the title of Chief Engineer. In forming the organization, Newell drew heavily from the ranks of his former division, appointing men who had been involved in western resource surveys for upwards of a decade.

Less than a year after passage of the Reclamation Act, the first six projects were approved, and in August 1903, construction of the first project, the Truckee-Carson Project in Nevada, began. Following approval of the first projects, project approval moved forward at a rapid pace. In 1904, five projects were authorized; in 1905, nine; in 1906, four new project were approved; and in 1907, one project. In 1907, the Reclamation Service was removed from the jurisdiction of the Geological Survey and given independent status as a bureau of the United States Department of the Interior.

The Reclamation Service soon established itself as a world leader in dam engineering and construction. In 1910, the Service completed Shoshone Dam (now called Buffalo Bill Dam) near Cody, Wyoming. At 325 feet, it was the tallest dam in the world. In 1915, Reclamation completed construction of Arrowrock Dam in Idaho, pushing the record to 350 feet. Throughout the late teens and twenties, Reclamation continued to hone its engineering skills, pioneering advancements in dam design and construction, concrete composition, stress analysis, high-pressure outlet gate technology, and structural behavior analysis. In 1932, the Bureau of Reclamation, so named in 1923, completed construction of Owyhee Dam in eastern Oregon. Rising 417 feet, Owyhee Dam established yet another record for Reclamation designed and

constructed dams. More importantly, Owyhee Dam was the proving ground for methods and technologies being developed for the construction of Hoover Dam which would rise more than 700 feet above the bed of the Colorado River.

The construction of Hoover Dam not only marked the beginning of a new era in dam construction, but a new era in the federal reclamation program as well: the era of multi-purpose water resource development with benefits that ranged from irrigation to hydroelectric power to flood control, to recreation, and to fish and wildlife enhancement. Hydropower had been a part of the Reclamation program since the installation of the first generator at Theodore Roosevelt Dam to provide power for construction. But generating plants on reclamation projects were primarily used to provide power on the projects for pumping and other project related uses. Surplus power was sold to farms and towns, but much of the electricity generated was used on the projects. While Reclamation engineers recognized the potential for hydroelectric development at many of Reclamation's reservoirs, the controversy over public vs private power development kept significant developments in check. Even so, by 1923, powerplants were operating on 12 Reclamation projects providing more than 33,000 kilowatts of energy to users throughout the west.

The passage of the Boulder Canyon Act in 1928, authorizing construction of Hoover Dam placed Reclamation at the forefront of the hydroelectric power industry in the west. The enormous generators turning deep inside Hoover's powerhouses would provide only one benefit to the project - revenue. Revenues from the sale of electricity generated at Hoover Dam would be used to repay the cost of construction. Unlike previous Reclamation projects, water users would not have to pay for project development. Power had become the paying partner of

irrigation and from then forward, federal irrigation and hydroelectric development would be almost inseparable.

Construction of Hoover Dam signaled the beginning of an era of large scale, multi-purpose, water resource developments for the Bureau of Reclamation. Major projects undertaken at this time included the Colorado-Big Thompson Project, a major trans-basin diversion project in Colorado, and the Central Valley Project, aimed at developing the water resources of California's vast Central Valley. Following on the heels of Hoover Dam, the Columbia Basin Project, with Grand Coulee Dam at its focus, began emerging from the arid regions of central Washington State. Like Hoover, Grand Coulee was centered around its hydropower potential. While the controversy over public vs. private power development continued, others questioned the wisdom of building the world's largest powerplants in a region relatively devoid of people and industry. Some of the power generated at Grand Coulee would be used to pump water to the more than 1,000,000 acres of project lands, but markets for surplus power seemed nowhere to be found. Few could have anticipated the surge in demand for power that the outbreak of World War II would provide.

When the United States entered World War II in 1941, the national industrial complex began to gear up to provide materials and supplies for the war effort. The western United States, where an abundance of cheap electrical power was readily available, was one of the major beneficiaries of the industrial build-up. Throughout the war, generators at Hoover and Grand Coulee, as well as numerous other Reclamation power facilities, operated full-time to provide power for the aircraft industry, ship yards, and other war related industries. In addition, Reclamation irrigation facilities supplied water to grow food not only for domestic use, but

overseas use as well. There can be little doubt that the power and water supplied by Reclamation projects in the west played a significant role in securing an Allied victory.

As World War II drew to a close, Reclamation officials and planners turned their attention toward the post-war era. Following the end of World War I, returning veterans rushed to claim newly opened farm units on Reclamation projects, and Bureau officials believed the same would be true following the end of World War II. In addition, thousands of veterans would be returning to a booming economy and in need of employment. With this in mind, Reclamation planners readied projects for construction and prepared project lands for settlement.

A significant step in preparing for the post-war period was the reorganization of the Bureau. In 1943, the Bureau announced the formation of six regions, with regional headquarters in Boise, Sacramento, Billings, Salt Lake City, Boulder City, and Amarillo. Between the time of the announcement and the implementation of the regional plan, a seventh region was added, headquartered in Denver. The regional directors had broad administrative authority to deal with the day to day operation of projects within their regional borders while maintaining close relationships with local water users. The responsibility for the technical aspect of project design and construction remained with the Office of the Chief Engineer in Denver while overall responsibility for the Bureau's operation came from the Commissioner's office in Washington D.C.

In the years immediately following the war, Reclamation's construction program took on enormous proportions. Much of the growth was fueled by the Pick-Sloan Missouri Basin Program - a joint program of Reclamation and the Corp of Engineers for the comprehensive development of the Missouri River Basin. The Missouri Basin Program was the largest water

resource development ever envisioned and included the full spectrum of multi-purpose benefits. The Pick-Sloan Plan called for construction of more than 300 project units which included over 100 dams providing 107 million acre-feet of storage, 2.6 million kilowatts of electricity, and water to irrigate more than 4,000,000 acres of land. Other project benefits included navigational improvements, flood control, recreational developments, fish and wildlife enhancement, and water for municipal and industrial uses.

Between 1945 and 1960, Reclamation began construction of more than 60 projects. In addition to units of the Pick-Sloan Program, Reclamation initiated construction on additional units of the Central Valley Project. In the Colorado River Basin, the first units of the Colorado River Storage Project began to take shape. And throughout the west, dozens of smaller projects emerged.

With the dawn of the 1960s, numerous forces began pressuring Reclamation which would eventually result in a fundamental shift in Reclamation's program and mission. Budgetary cutbacks, the shift in the western economy away from agriculture, and the rise of the environmental movement, were all factors which contributed to the change. But despite these forces, some of Reclamation's most notable achievements where accomplished during the 1960s. In 1964, Reclamation completed construction of Glen Canyon Dam, the key feature of the Colorado River Storage Project. Second only to Hoover Dam as the nation's tallest concrete dam, Glen Canyon Dam looms more than 700 feet above the bed of the Colorado River and stands as a monument to the to struggle between western resource development and environmental protection.

The last major round of project authorizations took place in the late 1960s. The few projects authorized since then were generally extensions of existing projects or projects dedicated to improving water quality, and several projects that were authorized have yet to be built. Throughout the 1970s, the environmental movement continued to gain strength, resulting in a strong opposition to water development projects, particularly in the west. The public's growing political awareness and the economic difficulties of the era also combined to thwart further developments.

In the late 1970s, two events took place that would result in significant changes in the Reclamation program. In June 1976, Teton Dam, a 300-foot high earthfill dam in eastern Idaho, failed, unleashing a torrent of water that devastated a large portion of the countryside. Although the only such occurrence in Reclamation's then 75 years of dam construction, the disaster called attention to the subject of dam safety and helped fuel opposition of water resource development projects. The second event was the release of President Jimmy Carter's "hit list" - a list of several dozen large water projects, including several Reclamation projects, which Carter refused to fund. While Carter's list proved to be politically unpopular and many of the projects survived, it was one more manifestation of the growing opposition to large scale water resource development projects.

The 1980s was period of transition during which Reclamation slowly and painfully turned from being a water resource development agency with the design and construction of water storage and delivery systems as its primary focus, to a water resource management agency with environmental protection, water conservation, and fish and wildlife enhancement given equal consideration with the needs of water users. It took Reclamation almost twenty years to succumb

to the forces that had been building against it. Beginning in 1988, Reclamation began a major reorganization which would see both the budget and staff of the organization significantly reduced. The change was difficult, and even today, a few voices of discontent can be heard in the halls of the old Engineering and Research Center in Denver, renamed the Reclamation Service Center - a name that reflects the new mission of the Bureau of Reclamation:

To manage, develop, and protect water and related resources in an environmentally and economically sound manner in the interest of the American public.

The changes at Reclamation were difficult, unfortunately hitting many personally. But it is through these changes that Reclamation has survived and will continue to play an important role in the American west of the twenty-first century.

Reclamation's involvement in archaeology and cultural resources management (CRM) began in the mid-1940s with participation in the River Basin Surveys Program. The establishment of the basin surveys was in response to authorization of the Pick-Sloan Missouri Basin Program. A group of prominent archaeologists, concerned about the potential destruction of valuable archaeological resources in the Missouri River Basin, formed a committee to lobby for establishment of a federal salvage archaeology program. The group, known as the Committee for the Recovery of Archaeological Remains, sought and received the support and sponsorship of the plan from the Smithsonian Institution.

All of the federal agencies involved in development of the Missouri River Basin were aware of the potential threat to important archaeological sites, but at that time, the only federal agency to have any responsibility for the protection of archaeological data was the National Park

Service, and recovery of that data was far outside the mission of the agency. The Park Service had agreed to conduct recreational surveys of reservoir sites in the Missouri River Basin, and the assessment of archaeological and historic resources was part of those surveys. In late 1945, the Park Service and the Smithsonian signed a memorandum of understanding whereby the Park Service would provide the Smithsonian with the survey results. The Smithsonian would then analyze the reports and provide the Park Service with plans and budgets for any proposed work. Funds for the salvage operations were provided by Reclamation and the Corps of Engineers, and the work was carried out by the Smithsonian. The River Basin Survey Program was established as part of the Bureau of American Ethnology and headed up by noted archaeologist Frank H. H. Roberts. Although created in response to the pending development of the Missouri River Basin, the River Basin Survey Program conducted work in river basins throughout the nation. The agreement which created the program was twice renewed, in 1961, and again in 1965.

Reclamation's participation in the River Basin Surveys Program was essentially voluntary, but in 1960, Congress began passing legislation that would, over time, establish a legal obligation for federal agencies to develop CRM programs. The Reservoir Salvage Act of 1960, required that any federal agencies constructing or permitting the construction of reservoirs, to notify the Secretary of the Interior of any potential harm to archaeological or historic sites. This was one of the first federal acts to recognize the importance of archaeological sites. In 1974, the Archaeological and Historic Preservation Act extended the provisions of the Reservoir Salvage Act to include all federal or federally sponsored construction activities, not just reservoir construction. The Act also authorized agencies to spend up to 1% of the project's cost to protect historic or archaeological sites.

In 1966, Congress passed the National Historic Preservation Act which, in part, requires federal agencies to consider the effects of any federal undertakings on historic resources (section 106). In 1971, President Richard Nixon issued Executive Order 11593 calling for the protection and enhancement of the cultural environment. The order required federal agencies to take a leadership role in "preserving, restoring and maintaining the historic and cultural environment of the Nation." Under the order, federal agencies were required to administer cultural properties under their control in a spirit of "stewardship and trusteeship." Agencies were also required to initiate policies, plans, and programs to preserve and maintain culturally significant properties, and, in consultation with the Advisory Council on Historic Preservation, develop procedures to assure that federal programs contribute to the preservation and enhancement of non-federal resources. In 1980, amendments to the National Historic Preservation Act of 1966 codified sections of Executive Order 11593, and required inventories of cultural resources on federal lands (section 110). The amendments also required agencies to develop programs to protect historic and cultural resources under their control.

In 1974, in response to the growing body of legislation requiring federal agencies to develop programs to manage cultural resources under their control, the Bureau of Reclamation hired its first archaeologist, Dr. Ward Weakley. As the responsibility for protection of cultural resources under their control grew, so too did Reclamation's cultural resources management staff. Soon after Reclamation hired Dr. Weakley, the CRM staff began to grow, and within a few years, CRM personnel were employed in many of Reclamation's regional and area offices.

Today, Reclamation's archaeologists and historians work to identify, evaluate, and preserve cultural resources located on lands administered by the agency or affected by agency

actions. In addition Reclamation's CRM personnel play an important role in the management of those lands by participating in the development of land use plans. Reclamation CRM personnel work closely with state officials, other federal agencies, and tribal representatives to provide assistance and guidance in management of cultural properties. Recent passage of the Native American Graves Protection and Repatriation Act (NAGPRA) has increased Reclamation's responsibilities towards the many Native American groups in the west, and Reclamation CRM personnel are working closely with tribal representatives and federal officials to fulfill those responsibilities.

In addition to its legal responsibilities, Reclamation's CRM program is dedicated to the preservation of archaeological and historic resources located throughout the west, not just on federally administered lands. Reclamation CRM personnel actively participate in programs to promote public education and awareness of the importance that cultural resources play in understanding our past. Through their participation in public education programs, sponsorship of archaeological and cultural resource activities and their continuing efforts to protect and preserve the evidence of past human activities, Reclamation's CRM personnel have shown their dedication to the preservation of the past for the benefit of future generations.

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